

**EPA-GE Citizen Coordinating Council**  
**March 30, 2006 Meeting**  
**Highlights**

**Participants:** See attached list

**Introduction:** Suzanne Orenstein, Facilitator, opened the meeting with a round of introductions and a review of the agenda. She noted the topics for this meeting:

- Overview of the Bench Scale Study Results for Silver Lake
- Updates on improvements to the public repositories and web site, and on activities at Newell St.
- Review of the schedule through September.

**Overview of Bench Scale Study Results for Silver Lake**

Ms. Orenstein introduced Andy Silver from GE and Mark Gravelding from Blasland, Bouck and Lee (BBL) who provided the overview of a recent set of studies to gather additional information for the design and construction of the cap for Silver Lake as specified in the Consent Decree. The slides of their presentation will be posted on the EPA website in the near future.

Andy Silver began the overview by noting that GE had contracted with BBL to conduct a set of studies to gather additional information about the capping of contaminated sediment in Silver Lake. He noted that GE provided the results of the Bench-Scale study in a report to EPA (available in the Repositories and on the EPA web site at [http://www.epa.gov/region1/ge/thesite/silverlake/reports/248107\\_3-06B-SStudy.pdf](http://www.epa.gov/region1/ge/thesite/silverlake/reports/248107_3-06B-SStudy.pdf)). The next steps are for EPA to review and comment on the report, then for GE to propose a design for a Pilot Study in an approximately one-acre area of Silver Lake, and implement that design after it is approved by EPA. After the Pilot Study is completed, GE will propose a design for the final cap for EPA approval.

Mark Gravelding walked through the detailed methods and results of three studies that comprised the Bench-Scale Study. The study consisted of evaluation of the behavior of sediment and cap materials in four-inch lexan cores in a laboratory. Study One determined the effective placement rate for the cap (a mix of sand and top soil) for use in Study 2. Study 2 determined how much the sediment collected from different areas of the lake consolidated from the weight of the cap, and the extent of mixing between the cap and the sediment, including migration of PCBs into the cap. Study 3 investigated PCB transport between the sediment and cap in the presence of simulated groundwater flow and gas generation, as well as the potential benefits of including a geofabric in the cap configuration.

The results of the bench scale studies are:

- Silver Lake sediments are capable of supporting cap materials with minimal mixing between the sediment and the cap materials.
- Conceptual cap configurations provide effective isolation of PCBs in sediment and mitigation of upward PCB migration.
- Conceptual cap design considerations and initial design assumptions are appropriate and do not require modification.
  - The assumptions and performance standards described in the Statement of Work are to install a cap over the entire bottom of the lake including:
    - An isolation layer with presumptive thickness of 6 inches and total organic carbon of 0.5%.
    - An additional 4-6 inches of isolation layer material to account for potential bioturbation and mixing.
    - An armoring layer along the shoreline.

Among the several questions and comments from CCC members and the public were the following:

- Q. How can a time frame of months for the bench scale investigation be extrapolated to the decades for which the project will be needed?
- A. These studies were evaluating the potential for failure of the cap or gross movement of PCBs. The Pilot Study will provide an additional opportunity to evaluate the cap design, but under conditions in the lake. Once the cap is installed, there is a monitoring program to assess the integrity of the cap. These studies are merely part of the information gathering process to create a cap that will be protective as required by the Consent Decree.
  
- Q. Isn't it true that the lake will have an annual inversion that brings water from the bottom up to the top due to temperature changes and oxygen concentrations?
- A. These natural processes occur, but the velocity created by the movement of the water is low, and is not strong enough to move the sand layer of the cap. Of more concern is the velocity of the lake at outfalls, which is why there will be armoring there.
  
- Q. The simulation of groundwater effects on the cap is not really covered fully by the bench scale study. What more is known about the groundwater effects on the cap?
- A. The in situ pilot study will look at that.
  
- Q. How was the depth of the bioturbation layer set at six inches?
- A. As part of the pre-design investigation we conducted a literature search, and reviewed field data about the degree of burrowing that could be expected. We found no animals in the lake that would burrow more than six inches.
  
- Q. Have you charted the springs in Silver Lake?

- A. We are not sure there are springs in Silver Lake, as we have not detected any. We did groundwater monitoring studies as part of the pre-design investigation, and did characterize the groundwater.
- Q. Is there any air monitoring going on around the Lake?
- A. Perhaps as part of other studies or characterizations, such as Brownfields investigations. We are not conducting any air monitoring.
- Q. Will there be a fish kill to eliminate the contaminated fish populations?
- A. The MA EOEA and Dept. of Fish and Wildlife are evaluating that; we do not know yet what they will propose.
- Q. Will you be monitoring lake critters to determine if they are being exposed to PCBs during the capping process?
- A. We have not determined that yet.
- Q. What is the potential for plant roots to get through the cap layer?
- A. The Natural Resource Damage Trustees have funding to do placement of some aquatic vegetation around the lake shore where there is going to be armor stone, however most of the lake is too deep to support such vegetation.
- Q. Did you do a water budget study of the lake? There is no valid outflow data from the lake, which means that we do not know how much flow, and thus how much PCB contamination, is discharging into the river. Any monitoring of outflow needs to be done at a time of realistic flows, not low flows.
- A. We will consider whether outflow data will be collected in the future.
- Q. Are PCBs the only contaminants in the sediment of Silver Lake?
- A. PCBs are the contaminants of most concern. There are other contaminants in the sediment including TPH and metals. There is a slightly elevated mercury level. The metals are bound to the sediment by sulfides.
- Q. There is contamination in Springside Pond. Is there any potential for it to flow into Silver Lake, perhaps in a high scouring event?
- A. We have no plans to investigate Springside Pond at this time.
- Q. How will you address the slope issues in placing the cap?
- A. The next study in the lake will test that factor. The test will be done in the steepest section of the lake. The greatest slope is a five-to-one ratio, which is not that severe a slope. We have found at other sites that the rate and method of placement of the cap are important factors in dealing with slopes.
- Q. Where is the outlet to Silver Lake? Is there more than one? Will you monitor the outflow for PCBs?
- A. There is only one outlet and it is to the East Branch of the Housatonic River. It has been sampled in the past, and we will monitor it during the pilot study.

Q. Have EPA and GE evaluated the cost difference between sediment removal and capping?

A. There was some discussion of that in an early document. We will research and let you know where the information can be found.<sup>1</sup>

Q. Will the neighborhoods affected by the trucking of the cap material be consulted about the extent of traffic the project will generate?

A. Yes.

Q. What precaution will you take regarding suspension of sediment during the capping process?

A. We are developing the engineering controls to address that.

Q. Is this a temporary measure or the permanent fix for Silver Lake?

A. This is the permanent remedy. Our goal is that Silver Lake will be swimmable with this remedy.

Public Comment: It is very sad that the lake cannot become a more pristine resource for the city of Pittsfield.

Public Comment: There are technologies to eliminate PCBs with enzymes that are being tried in Europe. Two representatives of the company that use this technology are here tonight. They are investigating the possibility of finding a pilot project site to demonstrate the technology here in the Housatonic.

Q. The high PCB concentrations in the lake, from 22,000 ppm to 220,000 ppm, seems to present a daunting challenge for the cap. Will it really be protective?

A. The remedy includes removal activities in the area with the most contaminated sediments. In combination with the cap, EPA believes the remedy will be protective.

Q. Who owns the land around the lake and the lake?

A. Much of the perimeter land is in commercial or residential ownership. The city owns some, and is planning for its restoration. GE owns a small portion of the land. The lake itself is a Great Pond and is owned by the Commonwealth of MA.

## Updates

Dean Tagliaferro reported that GE completed excavations at the Western MA Electric site on Newell St. All visible drums were followed into the parking lot and removed, along with additional capacitors. The next steps include preparing anchor trenches for liners, and then covering and restoring the area.

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<sup>1</sup> After the meeting, Dean Tagliaferro identified the documents with past discussion of this question. It appeared in a response to public comments, and is summarized in the attachment to these notes that was distributed to the CCC shortly after the meeting.

Dean also reported that EPA will make several improvements to the process of making project documents publicly available. He recognized the efforts by CCC members to brainstorm on the improvements in a February subgroup meeting, and outlined what is feasible for EPA to do at the present time. EPA will do the following things:

- Two CDs will be created and forwarded to the repositories for each significant document that EPA or GE submits. The goal is that one of those CDs will be available for checking out, like other library materials.
- If any CCC member or alternate wants a CD of a specific document for their own use, they can request one through Suzanne Orenstein and it will be provided.
- EPA will be developing updated and improved user guides to the repositories and the web site, as well as a master index for each repository.
- For the web site, EPA will put additional effort into ensuring that all documents are on the web site. It will also develop a new section of the web site called "New Documents" for ease of finding current information. There will also be a marked link for the CCC meeting highlights.
- EPA will send the CCC an email every two weeks with a list of documents that have been placed in the repositories.

CCC members noted that these efforts are welcome and useful steps. One member noted disappointment that there is no full repository in CT, and two noted interest in receiving any documents that are culled from any of the repositories.

## **Schedule**

The CCC reviewed its schedule through September and identified the following suggested changes and/or additions.

- A tour of the mile and one-half reach area, and possibly Hill 78, would be welcome, perhaps as the June optional meeting. EPA will consider this and come back to the CCC with a proposed process and date.
- A meeting on the results of investigations at Dorothy Amos Park and the West Branch is desirable. MA DEP and GE will consider this request and report back to the CCC.
- There has not been an update on progress on residential properties for a while. This topic should be addressed in the future.
- It would be good to hear from those who are working to develop the enzyme technology for PCB remediation. (It was noted that there will be a meeting devoted to alternative technologies in September which is probably the appropriate meeting for that discussion.)

The meeting adjourned at 7:35 PM.

### CCC Attendance: March 30, 2006

Name	Organization	Email Address	Attended
<b>Members</b>			
Thelma Barzottini	Citizens for PCB Removal		X
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## United States Environmental Protection Agency

Date: April 3, 2006

Subj: Follow-up to Questions from the CCC on the Cost to Remove Contaminated Sediment from Silver Lake

From: Dean Tagliaferro, EPA

To: Suzanne Orenstein, CCC Facilitator, for Distribution to CCC

At the March 30 CCC meeting, EPA was asked if we performed a cost estimate on removing contaminated sediment from Silver Lake. I responded that I believed that in 2000, in EPA's Response to Comments on the Consent Decree, there was a reference to an estimated cost for the removal of sediment from the Lake. After checking the public comments and EPA's response to comments, it appears that the estimate was first raised in an HRI comment, and that EPA did not do an estimate of its own.

In reviewing the public comments and EPA's responses, I found the following items:

1. There were several comments submitted by HRI on the proposed remedy for Silver Lake. HRI's full set of comments can be found on pages 120 to 175 at the following link to EPA's web page: <http://www.epa.gov/region01/ge/cleanup/exhibit1.pdf> (found under "cleanup agreements, Exhibit 1, Public Comments Submitted on the Proposed Consent Decree"). The HRI comments relative to Silver Lake are on pages 148 through 153. The pertinent comment is on page 151. On this page, the commenter states the following:

"If GE were to remove PCB-contaminated sediments above 10 ppm from Silver Lake, the approximate volume would be 316,000 cubic yards. 316,000 cubic yards is 474,000 tons. Let's use the high end estimate of what it costs to treat this contaminated sediment: at \$500 a ton, 474,000 a ton comes to \$23,700,000."

2. EPA's response to HRI's comments relative to Silver Lake is on pages 114 through 116 of the following link: <http://www.epa.gov/region01/ge/cleanup/exhibit2.pdf> (found under "cleanup agreements, Exhibit 2, United States' Responses to Comments on the Proposed Consent Decree"). The pertinent response is on page 115, response 61(D) and is as follows:

"The commenter's cost calculation for removal and treatment is not accurate. Using the same assumptions that the commenter used to calculate the cost of removal and treatment of contaminated sediments from Silver Lake, the cost of removal and treatment would be



\$237,000,000, not \$23,700,000 as the commenter suggested. It appears that the commenter made a math error. EPA continues to believe that the proposed alternative, which includes a combination of removal, capping and armoring, is protective and more cost-effective than the alternative or pilot project suggested by the commenter."

The above are comments and responses were made in 2000. I am not stating or concluding that the cost figures provided above are a detailed or accurate estimate of the actual cost to remove and treat all contaminated sediment at Silver Lake. Rather, the references above explain what I was remembering in my comments at the CCC meeting.